Math Solutions
FOUNDED BY MARILYN BURNS

Math Solutions Professional Learning

AGENDA
Math Workshop: Structures and Practices for Student Learning

OVERVIEW
Standards and student needs drive mathematics instruction. This course highlights Math Workshop, a model for organizing standards-based instruction to support all learners in the mathematics classroom. Participants engage in the Math Workshop model of instruction, reflect on how the structures and learning environment leverage increased learning for all students, and create a plan to implement Math Workshop in the classroom.

OUTCOMES
- Understand the purpose and use of the three structures of Math Workshop.
- Verbalize and act on the roles of the teacher and students in the Math Workshop classroom.
- Implement a plan for getting started with Math Workshop.
- Create a Math Workshop classroom that relies on formative assessment and differentiation.

DAY ONE
Opening
This introduction includes the course goals, community building, establishing of norms, and an overview of Math Workshop.

Session Tasks
- Show Me
- Building Numbers

Experiencing the Task and Share Structure
The Task and Share structure of Math Workshop provides students the opportunity to investigate mathematics by grappling with problems. During this session, participants experience the Task and Share structure and consider the kinds of tasks that support students in building conceptual understanding and procedural fluency.

Session Tasks
- Guess My Rule
- Palindromes

BREAK

Engaging Students in the Focus Lesson, Guided Math, and Learning Stations Structure

The Focus Lesson, Guided Math, and Learning Stations Math Workshop Structure requires organizing the math class for independent work, pairs, groups, and whole-class instruction in a thoughtful and deliberate way. While experiencing this structure, participants consider the potential of Learning Stations for supporting an engaging and accessible mathematics classroom.

Session Tasks

- Number Sense Routine Video: Counting Around the Room
- Focus Lesson: Introduce Learning Stations/Menu
- Learning Stations: Math Menu (K, 1–2, 3–5)
- Guided Math Lesson: Exploring Ones, Tens, and Hundreds with Base Ten Blocks

LUNCH

Building an Effective Learning Environment for Math Workshop

When an effective learning environment is established, students can make sense of rigorous problems, understand math concepts, and use procedures appropriately. During this session, participants explore three conditions that need to be in place for a highly effective Math Workshop classroom.

Session Tasks

- Math Workshop Classroom Videos
- Three Buckets Brainstorm

BREAK

Creating Accountability for Learning Stations

Learning Stations are a component for two of the structures of Math Workshop. In order for stations to be productive, students need to be engaged and feel accountable. This session models the Guided Math and Learning Stations structure as a means for having students take academic risks and rely on their own thinking and the thinking of other students.

Session Tasks

- Number Sense Routine: Tell Me All You Can
- Guided Math Lesson: Exploring Ones, Tens, and Hundreds with Base Ten Blocks
- Learning Stations: Math Menu (K, 1–2, 3–5)
- Give One – Get One

Closing

Participants take time to reflect on their experiences of the day related to the roles, structures, and learning environment of the Math Workshop model of instruction.

DAY TWO

Opening

This introduction connects the learning experiences from Day 1 to an overview of the ideas for Day 2 of the course.

Using Formative Assessment to Make Instructional Decisions

Implementing Math Workshop requires the use of a variety of strategies to monitor student learning. During this session, participants learn a process for making decisions as students respond to instruction and from reflecting on student data.

Session Tasks

- Classroom Data Brainstorm
- Anticipating Student Responses to Instruction
- Making Math Workshop Instructional Decisions

BREAK

Grouping Students for Math Class

The various structures of Math Workshop provide flexibility with delivering instruction to meet the learning needs of students. During this session, participants engage in a mathematical task and gain insight into the thinking of actual classroom teachers as they explore the teaching and learning aspects that inform decisions about intentionally grouping students for instruction.

Session Tasks

- Video: *Using Student Work to Differentiate Instruction*
- Olympic Day Problem
- Card Game

LUNCH

Planning for Successful Implementation of Math Workshop

Shifts in planning are required for successful implementation of Math Workshop. Using planning templates designed for Math Workshop, participants engage in a planning experience, developing an understanding of how to choose the appropriate structure to meet learning goals.

Session Tasks

- Math Class Scenario Sort
- Planning Experience

BREAK

Getting Started – The First Twenty Days
Math Workshop requires students to work in a variety of grouping structures. For students to work well in those structures, students need to feel part of a mathematics community. During this session, participants use key elements learned in the course to begin planning for the first 20 days with Math Workshop in order to create a pathway for building a strong mathematics community.

Session Tasks
- First Twenty Days Group Task

Closing
Participants take time to reflect on their experiences from the course.

Math Solutions Guiding Principles
Drawing upon academic work and our own classroom-grounded research and experience, Math Solutions has identified the following four instructional needs as absolutely essential to improving instruction and student outcomes:

- Robust Content Knowledge
- Understanding of How Students Learn
- Insight into Individual Learners through Formative Assessment
- Effective Instructional Strategies

These four instructional needs drive the design of all Math Solutions courses, consulting, and coaching. We consider them our guiding principles and strive to ensure that all educators:

- Know the math they need to teach—know it deeply and flexibly enough to understand various solution paths and students' reasoning
- Understand the conditions necessary for learning, what they need to provide, and what students must make sense of for themselves
- Recognize each student's strengths and weaknesses, content knowledge, reasoning strategies, and misconceptions
- Have the expertise to make math accessible for all students, to ask questions that reveal and build understanding, and to help students make sense of and solve problems